

REMARKS

Claims 1-2, 4-8, 10-13 and 15-17 are pending. Of those, claims 1, 8 and 13 are independent. By this reply, claims 3, 9 and 14 have been canceled without prejudice to or disclaimer of the subject matter contained therein.

§102 Rejection

Beginning on page two of the Office Action, claims 1-4, 6-11, 13-16 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,633,962 B1 to Burton et al. ("Burton"). Applicants traverse.

The '962 patent is directed to a storage system in which a controller gives one or more host computers selective access to physical storage devices via logical device mappings thereto. More particularly, cluster groups consisting of hosts and logical devices are defined. Hosts external to a cluster group are not given access to logical devices internal to the cluster group. And hosts within a cluster group can be restricted from accessing one or more of the logical devices within the cluster group.

Incidental to the discussion of cluster-group-based access control, the '926 patent discloses mapping a read/write R/W request to a logical unit number (LUN). According to the '962 patent, hosts view the storage space as being partitioned into LUNs; see lines 19-21 of col. 1. In contrast, the storage-controller sees the storage space as physical storage devices grouped into logical drives, and maps first from LUNs to logical drives and second from logical drives to physical devices as part of carrying out a R/W request; see lines 21-31 of col. 1.

Tables used in such mapping according to the '962 patent are depicted in Fig. 2, while Fig. 3 depicts a corresponding flowchart. Upon receiving a R/W request, one of controllers 12a, 12b (Fig. 1) extracts a port identification (ID) from the R/W request; see step 100 of Fig. 3 and lines 1-15 of col. 6. Here, a port ID identifies which of multiple ports is used by a host 4a, 4b to connect to storage controller 12a, 12b; see lines 56-58 of col. 5, and lines 15-17 of col. 6. Next, controller 12a/12b indexes into a port_ID:LUN_map table 70 using the extracted port ID to obtain a corresponding LUN map number (namely, the number denoting a particular instance of a LUN:logical_disk_num:cluster table 60); see steps 102-104, and lines 13-15 of col. 6.

Next, after having obtained the appropriate LUN map 70, controller 12a/12b indexes into that LUN map 70 using a targeted LUN extracted from the R/Q request; see step 106; and lines 17-22. Controller 12a/12b does so to determine if the host (from which the R/W request was received) has permission to access the targeted LUN; see step 108; and lines 22-25 of col. 6. Permission is indicated if a logical disk number is listed in the row associated with the LUN; see step 108, and lines 29-34 of col. 6. If permission exists, then controller 12a/12b carries out the R/W request upon the logical disk number corresponding to the LUN. However, the '962 patent does not discuss details of how the logical disk number is mapped to the corresponding physical storage devices.

In summary, the '962 patent uses the port_ID to find the LUN map. And, after having obtained the appropriate LUN map, the '962 patent uses only the LUN to find the logical disk number.

A distinction of independent claim 1 over the '962 patent is mapping from a R/W storage request to at least one physical LUN based upon an extracted host id parameter, a target LUN parameter and a target HBA parameter. Again, the '962 patent uses different parameters to map from a R/Q request to physical storage devices. Claims 2 and 4-7 depend at least indirectly from claim 1, respectively, and share at least the distinction of claim 1 by dependency. Claim 2 has been canceled making the rejection thereof moot.

Independent claims 8 and 13 share a distinction over the '962 patent that is similar to the distinction of claim 1. Claims 10-11 and 15-16 depend at least indirectly from claims 8 and 13, respectively, and share at least the respective distinction thereof. Claims 9 and 14 have been canceled, making the rejections thereof moot.

In view of the foregoing discussion, the §102 rejection of claims 1-4, 6-11, 13-16 over the '962 patent is improper and Applicants request that it be withdrawn.

§103 Rejection

On page four of the Office Action, claims 7, 12 and 17 are rejected under 35 U.S.C. §103(a) as being obvious over the '962 patent. Applicants traverse.

Claims 7, 12 and 17 depend indirectly from claims 1, 8 and 13, respectively, and share at least the respective distinction thereof noted above in the traversal of the §102 rejection based upon the '962 patent. As such, the §103 rejection is improper.

In the alternative, Applicants will assume for the sake of argument that the '962 patent differ from claims 7, 12 and 17 only as acknowledged by the Examiner. In the stated obviousness rationale, the Examiner has asserted that one of ordinary skill in the

art would have modified the '962 patent to adopt the respective features of claims 7, 12 and 17 in order "to ensure quality of service within the system [of the '962 patent]" (see page 4 of Office Action). Applicants traverse.

What about the '962 patent suggests that the system disclosed therein suffers a deficiency in service-quality that represents a problem, the solution of which would be a motivation to modify the '962 patent? Applicants submit that there is no suggestion in the '962 patent of a deficiency in the system thereof. If such a suggestion is absent from the '962 patent, then what evidence does the Examiner have of there being a recognition in the art of such a deficiency in the system of the '962 patent? Applicant submits that there was no recognition in the art of a problem with the system of the '962 patent. Absent a recognition of a problem, the ordinarily-skilled artisan would have had no problem to solve and hence would not have modified in the '962 patent as asserted by the Examiner. Moreover, the Examiner has cited no other evidence of there being some knowledge in the art that would have motivated the ordinarily-skilled artisan to modify the '962 patent to achieve some benefit. Applicants challenge the Examiner to supply such evidence. Applicants submit that the Examiner's obviousness rationale is improper, making the §103 improper.

In view of the foregoing discussion, withdrawal of the §103 rejection is requested.

CONCLUSION

The issues in the case are considered to be resolved. Accordingly Applicants again request a Notice of Allowability.

Person to Contact

In the event that any matters remain at issue in the application, the Examiners are invited to contact the undersigned at (703) 668-8000 in the Northern Virginia area, for the purpose of a telephonic interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By:



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